CNS

Computer Networks & Software, Inc.

Task Order 4 Final Technical Report

to

NASA GRC

for

Communications Related to Weather Information Handling and Dissemination

NASA Contract No. NAS 3 99165, Task Order 4

November 13, 2000

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Communications Related to Weather Information Handling and Dissemination
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1. INTRODUCTION

This report summarizes the tasking contained in the Statement of Work and describes the results of the project. In addition, it addresses the principles, procedures, and methods of application that would be generally applicable to using the results of the project.

2. STATEMENT OF WORK

2.1. Background

NASA Glenn Research Center (GRC) is involved in the Aviation Weather Information (AWIN) Program, which has a goal of reducing the aircraft accident rate, by a factor of five within 10 years and by a factor of 10 within 20 years. GRC's efforts concentrates on the communications means needed to disseminate effective weather data. GRC's focus in on developing new technologies and techniques to support the digital communication of weather information between airborne and ground-based users.

2.2. Detailed Task Descriptions & Specific Work Elements

The definition of communications structures to support the collection and dissemination of weather related information for the improvement of flight safety will be performed. The activities of industry and government committees related to aviation weather information will be monitored.

2.2.1. Industry Collaboration

GRC intends to interact with industry and government committees (such as the RTCA Special Committee, SC-195 Flight Information Services Communications (FISC)) in developing communications means to improve aviation safety. When directed, the contractor shall also attend meetings in support of the GRC representative. Occasionally, a GRC representative may not be available and the contractor shall attend a meeting as the GRC representative. The contractor will monitor the activities of industry and government committees related to aviation communications.

The contractor shall prepare and submit to the GRC Contracting Officers Technical Representative (COTR) a report that summaries key points about each meeting.

2.2.2. Position Papers and Analysis

Technical issues that are raised at a standards committee meeting may require analysis. The contractor will perform technical analysis and develop position papers for GRC (as directed by the COTR) as part of the process of developing communications mechanism to improve flight safety. This may include technical collaboration with airlines, the FAA, the IETF, RTCA, NASA Research Centers, and other aviation related industry groups such as the National Business Aviation Association (NBAA) and the Aircraft Owners & Pilots Association (AOPA).

2.3. Task Reviews

The scope and specific work elements of this task will be reviewed at regular intervals to evaluate alignment with NASA GRC technical support areas, customer requirements, and funding availability.

2.3.1. GRC Meetings

The contractor shall attend meetings at GRC as directed by the COTR. The contractor shall participate in telephonic conferences.

2.4. Deliverables

2.4.1. Format

Meeting notes, reports, and position papers will be delivered to GRC as an MS Office 97 file. Normally, the file will be delivered as an e-mail attachment. Hard copies of the documents shall be prepared if directed by the COTR. The number of hard copies required will be specified by the COTR.

2.4.2. Schedule

Deliverable	Due Date
Meeting Notes	5 working days after completion of the meeting
Technical Analysis Reports	As directed by the COTR
Position Papers	As directed by the COTR

3. PROJECT RESULTS

Task Order 4 of NASA Contract NAS 3 99165 was conducted to support Communications Related to Weather Information Handling and Dissemination. The goal of the project define the communications structures needed to support the collection and dissemination of weather related information for the improvement of flight safety. A supporting goal was to monitor the activities of industry and government committees related to aviation weather information.

3.1. Industry Collaboration

In furtherance of this task, CNS attended meetings of the RTCA Special Committee, SC-195, Flight Information Services Communications (FISC) and the AEEC Aircraft Data Network Working Group Project Paper 664. CNS monitored the activities of industry and government committees related to aviation communications. After each meeting, CNS prepared and submitted a report summarizing key points for the meeting (minutes).

CNS attended the following meetings:

- RTCA SC-195: 28 - 30 Mar 00
- RTCA SC-195: 6 - 8 Jun 00
- RTCA SC-195: 26 - 28 Sep 00
- AEEC ADN 664: 21 - 24 Mar 00
- AEEC ADN 664: 8 Jun 00
- AEEC ADN 664: 10 - 13 Jul 00
- AEEC ADN 664: 10 Aug 00
- AEEC ADN 664: 28 - 31 Aug 00
- AEEC ADN 664: 6 - 10 Nov 00
- 1st NASA Aviation Safety Program Weather Accident Prevention Project Annual Review: 23-25 May 00

3.2. Position Papers and Analysis

CNS collaborated with Cisco (Dan Shell) on the development of an AEEC Aircraft Data Network Working Group Project Paper 664 Router Specification. The first draft was delivered to the AEEC AND WG Chair on June 8, 2000.

CNS is also helping to define an upper layer specification for AND 664 Part 8. The approach was briefed at the July 2000 meeting and a working paper presented at the August 2000 meeting. A revision will be published later this year.

CNS is participating in the development of the Minimum Aviation System Performance Standards (MASPS) for the Flight Information Services - Broadcast (FIS-B) Data Link.

3.3. Task Reviews

CNS participated in the NASA Aviation Safety Program Weather Accident Prevention Project Annual Review, held NASA Langley Research Center, May 23-25, 2000. Project status reviews were held at NASA GRC on June 23, 2000, September 19, 2000, and October 26, 2000.

4. STUDY RESULTS USAGE

The Communications Related to Weather Information Handling and Dissemination project would be applicable to understanding how new communications technologies and tools will improve aviation safety and how aviation weather information might be disseminated to general aviation.

5. NEW TECHNOLOGY

This project did not involve the development of new technology.